(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: peptide
(iii) HYPOTHETICAL: NO
(vi) ORIGINAL SOURCE:
(A) ORGANISM: Mouse
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Leu Thr Cys Tyr His Cys Phe Gln Pro Val Val Ser Ser Cys Asn Met
1 5 10 15

Asn Ser Thr Cys Ser Pro Asp Gln Asp Ser Cys Leu Tyr Ala Val Ala
20 25 30

Gly Met Gln Val Tyr Gln Arg Cys Trp Lys Gln Ser Asp Cys His Gly
35 40 45

Glu Ile Ile Met Asp Gln Leu Glu Glu Thr Lys Leu Lys Phe Arg Cys
50 55 60

Cys Gln Phe Asn Leu Cys Asn Lys Ser Asp
65 70

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 82 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: peptide
(iii) HYPOTHETICAL: NO
(vi) ORIGINAL SOURCE:
(A) ORGANISM: Human
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Leu Tyr Glu Leu Ile Tyr Val Leu Asp Lys Ala Ser Met Lys Arg Lys
1 5 10 15

Gly Val Glu Leu Lys Asp Ile Lys Arg Cys Leu Gly Tyr His Leu Asp
20 25 30

Val Ser Leu Ala Phe Ser Glu Ile Ser Val Gly Ala Glu Phe Asn Lys
35 40 45

Asp Asp Cys Val Lys Arg Gly Glu Gly Arg Ala Val Asn Ile Thr Ser
50 55 60

Glu Asn Leu Ile Asp Asp Val Val Ser Leu Ile Arg Gly Gly Thr Arg
65 70 75 80

Lys Tyr

(2) INFORMATION FOR SEQ ID NO:15:
(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 86 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear
(ii) MOLECULE TYPE: peptide

U.S. PAT NO. 5,843,884

US005843884A

United States Patent [19]

Sims

[11] Patent Number: 5,843,884

[45] Date of Patent: Dec. 1, 1998

[54] **C9 COMPLEMENT INHIBITOR**

[75] Inventor: **Peter J. Sims**, Mequon, Wis.

[73] Assignee: **Oklahoma Medical Research Foundation**, Oklahoma City, Okla.

[21] Appl. No.: **559,492**

[22] Filed: **Nov. 15, 1995**

[51] **Int. Cl.**[6] **A01N 1/00**; A61K 38/00; A61K 39/395; C07K 16/00

[52] **U.S. Cl.** **514/2**; 530/324; 530/387.1; 530/387.2; 424/131.1; 424/138.1

[58] **Field of Search** 424/138.1, 131.1; 536/23.1; 530/300, 350, 324, 387.1, 387.2; 514/2

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[57] **ABSTRACT**

Pharmaceutical compositions are designed based on the criticality of a portion of C9 for assembly of the C5b9 complex, which specifically modulate binding of CD59 to C9, either molecules structurally mimicking C9 amino acid residues 359 to 384 which bind to CD59 or molecules binding to C9 amino acid residues 359 to 384. Molecules which inhibit CD59 binding include peptides containing residues 359–384 which compete for binding with the other components of the C5b9 complex and anti-idiotypic antibodies immunoreactive with C9 amino acid residues 359 to 384. Molecules which prevent assembly of the C5b-9 complex include antibodies and antibody fragments immunoreactive with amino acid residues 359 to 384 of C9, peptides that bind to amino acid residues 359 to 384 of C9, and nucleotide molecules that bind to amino acid residues 359 to 384 of C9.

4 Claims, 4 Drawing Sheets

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L2: Entry 1 of 1 File: USPT Dec 1, 1998

US-PAT-NO: 5843884
DOCUMENT-IDENTIFIER: US 5843884 A

TITLE: C9 complement inhibitor

DATE-ISSUED: December 1, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sims; Peter J.	Mequon	WI		

US-CL-CURRENT: 514/2; 424/131.1, 424/138.1, 530/324, 530/387.1, 530/387.2

CLAIMS:

I claim:

1. A composition comprising molecules specifically modulating binding of CD59 to C9 selected from the group of molecules consisting of peptides of between 26 and 30 amino acids which bind to CD59 and molecules binding to C9 amino acid residues 359 to 384 (amino acid residues 381-406 of SEQ. ID NO. 5).

2. The composition of claim 1 comprising molecules selected from the group of molecules consisting of peptides of between 26 and 30 amino acids comprising hu C9 amino acid residues 359 to 384 (amino acid residues 381-406 of SEQ. ID NO. 5), anti-idiotypic antibodies immunoreactive with C9 amino acid residues 359 to 384 (amino acid residues 381-406 of SEQ. ID NO. 5), and covalently cyclized peptides comprising hu C9 amino acid residues 359 to 384 (amino acid residues 381-406 of SEQ. ID NO. 5).

3. The composition of claim 2 wherein the molecules are a peptide including amino acid residues 359 to 384 of hu C9 (amino acid residues 381-406 of SEQ. ID NO. 5).

4. The composition of claim 1 further comprising a pharmaceutically acceptable carrier for administration to patients in need thereof.

Previous Doc Next Doc Go to Doc#